MEMORANDUM
To: Dr. Jeff LaMondia, City Engineer, Auburn, AL
From: Lan Liu
Date: March 24, 2017
RE: Obstacles on an Expanded Roadway Segment in Auburn, AL.

I. Purpose

This assignment is created to let students practice their skills on how to collect waypoints with GPS device, transfer these points into ArcGIS and display on map. By conducting this assignment, students will create a map to identify the obstacles on the expended roadway in Auburn, AL.

II. Methods of creating a map

A large map was created from four layers and an inset map was created from a data frame with two layers. The final layout was made with following steps:

- First, the data was downloaded and exported into a folder. And four layers (structures, streets, inlets, and parcels) were selected to show up in ArcGIS. Using add data button in "File" menu, to add XY data. X represented Longitude, Y represented Latitude, and Z represented Elevation. The geographic coordinate systems should be set as "WGS 1984" to combine data consistently.
- Second, by using editor menu, the W Magnolia Road was split out which made the relevant information show in the attribute table. Data was exported as the studied segment was selected and a new layer named studied street section was created.
- Third, to identify the obstacles that shown in map. The symbols for trees, signs, hydrants, power box, and light poles were set up in labels menu to reflect the nature of obstacles.
- Forth, buffering the studied street section to create a 12-ft pathway buffer and 30-ft travel way buffer around roadway respectively. After this step, two layers were added into the inset map to show the location of studied segment in Auburn street network.

III. Findings

In the map, it has shown that the expanded path way and travel way around the existed road way. Nearly half of the obstacles are located on this expanded road way which need to remove for widening road.
The existed road way is too narrow to afford traffic flow during peak hour. It is highly recommended that expanding this roadway to support pathways or larger travel ways.

IV. Caveats

Except removing obstacles within the expanded roadway, there are a lot of inlets within this region which will limit the work.

V. Appendices

City of Auburn

http://jlamondia.weebly.com/civl-5410---gis-in-civil-engineering.html